

Amendments to the Claims

Please amend claims as follows.

1. (currently amended) A method of automated path tracing from an original mesh switch through a switching mesh to a specified destination, the method comprising:
 - building a mesh traceroute packet to the specified destination;
 - transmitting the mesh traceroute packet via an exit port associated with the specified destination; and
 - receiving the mesh traceroute packet as returned,wherein the mesh traceroute packet as returned includes a plurality of hop entries providing a path trace from the original mesh switch through the switching mesh to the specified destination, each hop entry including a hop media access (MAC) address, a hop in-port, and a hop out-port.
2. (original) The method of claim 1, wherein the specified destination comprises a search MAC address and VLAN identifier.
3. (original) The method of claim 1, further comprising:
 - determining whether a trace complete flag in the returned packet is set;
 - and
 - outputting results from a completed mesh traceroute if the trace complete flag is set and if a trace found flag is set.
4. (original) The method of claim 3, further comprising:
 - generating an error message if the trace complete flag is clear or if failure is indicated by another flag.

5. (original) The method of claim 1, further comprising:
 - receiving the mesh traceroute packet at a hop mesh switch;
 - appending a hop entry to the mesh traceroute packet; and
 - forwarding the packet via a hop out-port to a next mesh switch.
6. (original) The method of claim 5, further comprising:
 - receiving the mesh traceroute packet at a destination mesh switch;
 - appending a final hop entry to the mesh traceroute packet;
 - marking a trace complete flag; and
 - sending the packet back towards the original mesh switch.
7. (original) The method of claim 6, wherein the packet is sent back towards the original mesh switch by way of a reverse trace path.
8. (canceled)
9. (currently amended) ~~The switching device of claim 8.~~ A switching device configured to be a member of a switching mesh, the switching device comprising:
 - a plurality of ports; and
 - a switch control device coupled to the plurality of ports,
 - wherein the switch control device is configured to perform an automated
 - method of tracing a path through the switching mesh to a specified
 - destination, wherein the automated method is accomplished by
 - building a mesh traceroute packet to the specified destination,
 - transmitting the mesh traceroute packet from an exit port
 - associated with the specified destination, and receiving the mesh
 - traceroute packet as returned via the same port, wherein the mesh
 - traceroute packet as returned includes a plurality of hop entries

providing a path trace from the original mesh switch through the switching mesh to the specified destination, each hop entry including a hop media access (MAC) address, a hop in-port, and a hop out-port.

10. (original) The switching device of claim 9, wherein the specified destination comprises a search MAC address and VLAN identifier.

11. (currently amended) A method of responding to receipt of a mesh traceroute packet during an automated path tracing, the method comprising:
 - receiving the mesh traceroute packet at a mesh switch; and
 - if the mesh switch is determined to comprise a hop mesh switch, then
 - appending a hop entry to the mesh traceroute packet, wherein the hop entry includes at least a hop media access (MAC) address, a hop in-port, and a hop out-port, and forwarding the packet via the hop out-port to a next mesh switch.

12. (canceled)

13. (currently amended) The method of claim 11, further comprising:
 - ~~determining that~~ if the mesh switch comprises is determined to comprise a destination mesh switch~~[[:]], then~~ filling in at least a hop in-port in the hop entry~~[[:]],~~ marking a trace complete flag~~[[:]],~~ and returning the packet towards the original mesh switch via the hop in-port.